UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,270	12/16/2004	David Keith Roberts	NL020547US	3558

24737   7590   04/13/2009
PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER
LOUIE, OSCAR A

ART UNIT	PAPER NUMBER
2436	

MAIL DATE	DELIVERY MODE
04/13/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _27 January 2009_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-3,5-9,11,17-20 and 22-29_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _1-3,5-9,11,17-20,22 and 25-28_ is/are rejected.

7)☒ Claim(s) _23,24 and 29_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

This final action is in response to the amendment filed on 01/27/2009. Claims 1-3, 5-9,

11, 17-20, & 22-29 are pending and have been considered as follows.

Examiner Note

In light of the applicants' remarks and amendments, the examiner hereby withdraws his

previous Specification Objections, withdraws his previous Claim Objections, withdraws his

previous 35 U.S.C. 112 2nd paragraph rejections, and withdraws his previous 35 U.S.C. 101

rejections.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1, 11, 22, 23, 27, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Davis (US-5907619-A) in view of Gennaro et al. (US-6009176-A).

Claims 1 & 22:

Davis discloses a method of embedding a signature in an audio-visual signal for authentication of said audio-visual signal, said signal being comprised of a plurality of sequential frames, each of said plurality of sequential frames being comprised of at least two frame portions and an apparatus comprising,

- "an input into which an audio-visual signal is fed from a capture device" [FIG 3 illustrates inputting the signal];

- "said signal being comprised of a plurality of sequential frames, each of said plurality of sequential frames being comprised of at least two frame portions" [FIG 2 illustrates a plurality of frames each comprising at least two portions];

- "an output from which the frames with the embedded signatures are outputted" [FIG 3 illustrates outputting the signal with embedded signature];

- "a processor calculating a signature based on the stored first frame portion of said frame of said audio-visual signal" (i.e. "FIG. 3 is an illustrative block diagram showing another embodiment of the SCSD 100 that allows authentication of individual sections of an image frame, using only one signature") [column 5 lines 10-13];

- "loading a second frame portion of the frame replacing the first frame portion in the buffer memory, the reduced memory requirement being equal in size to a larger of the first frame portion or the second frame portion" (i.e. "authentication of individual sections of an image frame, using only one signature") [column 5 lines 12-13];

- "embedding the signature in the second frame portion of the frame such that the signature is embedded in a different portion of the frame than a portion of the frame on which the signature is calculated" (i.e. "authentication of individual sections of an image frame, using only one signature") [column 5 lines 12-13];

but, does not explicitly disclose,

- "a memory connected with the input for sequentially storing/loading a first frame portion of said audio-visual signal in a buffer memory, thereby allowing for a reduced memory requirement relative to storing an entire frame of said audio-visual signal," although Gennaro et al. do suggest reducing computation time by reducing the number of digital signatures and only storing a small amount of information from the data stream for processing at a time (i.e. storing a portion), as recited below;

- "embedding the signature in one of said at least two frame portions of said frame of said audio-visual signal," although Gennaro et al. do suggest the embedding of authentication information inside a frame/field, as recited below;

however, Gennaro et al. do disclose,

- "It is therefore an object of this invention to reduce computation time necessary to sign and authenticate a stream of data by reducing the number of digital signatures required for one to authenticate the data stream. The foregoing is accomplished without having to resort to storing large portions of the data stream and without maintaining excessively large authentication tables… the receiver has a "small" buffer…" [column 2 lines 30-36, 49];

- "In the case of MPEG video and audio, there are several methods for embedding

    authentication data. Firstly the Video Elementary stream has a USER-DATA section for

    putting arbitrary user defined information and this section could be embedded in each

    frame (or field)" [column 12 lines 54-57];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the

applicant's invention to include, "loading a first frame portion of said audio-visual signal in a

buffer memory, thereby allowing for a reduced memory requirement relative to storing an entire

frame of said audio-visual signal" and "embedding the signature in one of said at least two frame

portions of said frame of said audio-visual signal," in the invention as disclosed by <u>Davis</u> for the

purposes of embedded authentication with reduced computation time and storage capacity.

Claim 11:

<u>Davis</u> and <u>Gennaro et al.</u> disclose a method of embedding a signature in an audio-visual signal

for authentication of said audio-visual signal, said signal being comprised of a plurality of

sequential frames, each of said plurality of sequential frames being comprised of at least two

frame portions, as in Claim 1 above, but <u>Davis</u> does not disclose,

- "the steps of calculating and embedding said signature are performed in real-time,"

    although <u>Gennaro et al.</u> do suggest fast computations resulting in real-time playback, as

    recited below;

however, <u>Gennaro et al.</u> do disclose,

- "the receiver has processing power or hardware that can compute a small number of fast

    cryptographic checksums faster than the incoming stream rate while still being able to

    play the stream in real-time" [column 2 lines 51-54];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the

applicant's invention to include, "the steps of calculating and embedding said signature are

performed in real-time," in the invention as disclosed by <u>Davis</u> for the purposes of playing the

stream in real-time.

Claim 27:

<u>Davis</u> discloses a computer readable medium having thereon computer readable instructions

which control one or more computers to perform the steps of comprising,

- "calculating a signature based on the stored first frame portion" (i.e. "FIG. 3 is an

  illustrative block diagram showing another embodiment of the SCSD 100 that allows

  authentication of individual sections of an image frame, using only one signature")

  [column 5 lines 10-13];

- "embedding the signature in a second frame portion of the frame so that the signature is

  embedded in a different portion of the frame than a portion of the frame for which the

  signature is generated" (i.e. "authentication of individual sections of an image frame,

  using only one signature") [column 5 lines 12-13];

- "thereby reducing a memory size for authenticating the frame from a size of the frame

  matched in size to the larger of the first frame portion or the second frame portion" (i.e.

  "authentication of individual sections of an image frame, using only one signature")

  [column 5 lines 12-13];

but, does not explicitly disclose,

- "storing a first portion of a frame of an audio-visual signal wherein said frame is comprised of at least two frame portions, thereby allowing for a reduced memory requirement," although Gennaro et al. do suggest reducing computation time by reducing the number of digital signatures and only storing a small amount of information from the data stream for processing at a time (i.e. storing a portion), as recited below;

however, Gennaro et al. do disclose,

- "It is therefore an object of this invention to reduce computation time necessary to sign and authenticate a stream of data by reducing the number of digital signatures required for one to authenticate the data stream. The foregoing is accomplished without having to resort to storing large portions of the data stream and without maintaining excessively large authentication tables… the receiver has a "small" buffer…" [column 2 lines 30-36, 49];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "storing a first portion of a frame of an audio-visual signal wherein said frame is comprised of at least two frame portions, thereby allowing for a reduced memory requirement," in the invention as disclosed by Davis for the purposes of embedded authentication with reduced computation time and storage capacity.

Claim 28:

<u>Davis</u> discloses a method of embedding a signature in an audio-visual signal comprising,

- "calculating a first signature based on the first slice stored in the memory" (i.e. "FIG. 3 is an illustrative block diagram showing another embodiment of the SCSD 100 that allows authentication of individual sections of an image frame, using only one signature") [column 5 lines 10-13];

- "replacing the first slice in the memory with a second slice for calculating a second signature of the second slice" (i.e. "authentication of individual sections of an image frame, using only one signature") [column 5 lines 12-13];

- "embedding the first signature in the second slice so that a signature is embedded in a different slice than a slice of the frame for which the signature is generated and a memory size for authenticating the frame is reduced from a size of the frame to substantially a size of the largest of the slices" (i.e. "authentication of individual sections of an image frame, using only one signature") [column 5 lines 12-13];

but, does not disclose,

- "dividing a frame of the audio-visual signal into equal sized slices," although <u>Gennaro et al.</u> do suggest frames each with user data subsections, as recited below;

- "storing a first slice of the slices in a memory having a capacity which is equal to a size of the largest of the slices," although <u>Gennaro et al.</u> do suggest reducing computation time by reducing the number of digital signatures and only storing a small amount of information from the data stream for processing at a time (i.e. storing a portion), as recited below;

however, Gennaro et al. do disclose,

- [FIG 1A illustrates frames each with user data subsections];

- "It is therefore an object of this invention to reduce computation time necessary to sign
  and authenticate a stream of data by reducing the number of digital signatures required
  for one to authenticate the data stream. The foregoing is accomplished without having to
  resort to storing large portions of the data stream and without maintaining excessively
  large authentication tables… the receiver has a "small" buffer…" [column 2 lines 30-36,
  49];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the

applicant's invention to include, "dividing a frame of the audio-visual signal into equal sized

slices" and "storing a first slice of the slices in a memory having a capacity which is equal to a

size of the largest of the slices," in the invention as disclosed by Davis for the purposes of

embedded authentication with reduced computation time and storage capacity.

3.   Claims 2, 5, & 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Davis (US-5907619-A) in view of Gennaro et al. (US-6009176-A) and in further view of Baker

et al. (US-5790110-A).

Claims 2:

Davis and Gennaro et al. disclose a method of embedding a signature in an audio-visual signal

for authentication of said audio-visual signal, said signal being comprised of a plurality of

sequential frames, each of said plurality of sequential frames being comprised of at least two

frame portions, as in Claim 1 above, but their combination do not disclose,

- "said at least two frame portions of said frame of said audio-visual signal respectively comprise patterns of horizontal lines of said frame of said audio-visual signal," although Baker et al. do suggest that in interlaced video, fields or portions of fields are comprised of even and odd horizontal lines, as recited below;

- "said at least two frame portions of said audio-visual signal comprise a slice of at least one consecutive line of a plurality of horizontal lines comprising said frame of said audio-visual signal," although Baker et al. do suggest that in interlaced video, fields or portions of fields are comprised of even and odd horizontal lines, as recited below;

- "said second field is a field comprising a slice of at least one consecutive horizontal line of a plurality of said horizontal lines comprising said frame of said audio-visual signal," although Baker et al. do suggest that in interlaced video, fields or portions of fields are comprised of even and odd horizontal lines, as recited below;

however, Baker et al. do disclose,

- "After writing composite pixel data for sixteen (16) video pixels on four adjacent lines, the software according to the first embodiment checks to see if a horizontal line of composite pixel data has been completed…This process continues until a complete screen of composite pixel data has been written into the display memory (which with interlacing includes both an even and odd field)" [column 18 lines 59-60 & column 19 line 10];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "said at least two frame portions of said frame of said audio-visual signal respectively comprise patterns of horizontal lines of said frame of said audio-visual

signal" and "said at least two frame portions of said audio-visual signal comprise a slice of at

least one consecutive line of a plurality of horizontal lines comprising said frame of said audio-

visual signal" and "said second field is a field comprising a slice of at least one consecutive

horizontal line of a plurality of said horizontal lines comprising said frame of said audio-visual

signal," in the invention as disclosed by Davis and Gennaro et al. since the make up of

fields/portions of fields comprise even and odd horizontal lines, it is reasonable to expect one of

ordinary skill in the art to follow similar interlaced video standards.

Claim 5:

Davis, Gennaro et al., and Baker et al. disclose a method of embedding a signature in an audio-

visual signal for authentication of said audio-visual signal, said signal being comprised of a

plurality of sequential frames, each of said plurality of sequential frames being comprised of at

least two frame portions, as in Claim 4 above, but the combination of Davis and Gennaro et al.

do not disclose,

- "said audio-visual signal is an interlaced signal," although Baker et al. do suggest that a
  video signal may be interlaced, as recited below;

- "said first portion comprises one of all even or all odd lines," although Baker et al. do
  suggest fields or portions of a field comprising even and odd lines, as recited below;

- "said second portion comprises all remaining odd or even lines not included in said first
  portion," although Baker et al. do suggest fields or portions of a field comprising even
  and odd lines, as recited below;

however, <u>Baker et al.</u> do disclose,

- "A "Field" is video data for a set of lines that make up part of one screen or picture out of a video stream. For interlaced systems, a frame usually has two fields" [column 5 lines 15-16];

- "For interlaced systems, a frame usually has two fields. One field contains the even-numbered lines of video data while the other field is made up of the odd-numbered lines of video data" [column 5 lines 17-19];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "said audio-visual signal is an interlaced signal" and "said first portion comprises one of all even or all odd lines" and "said second portion comprises all remaining odd or even lines not included in said first portion," in the invention as disclosed by <u>Davis</u> and <u>Gennaro et al.</u> since a video signal may be interlaced where fields or portions of a field comprise even and odd lines, it is reasonable to expect one of ordinary skill in the art to have one portion made up of even lines and another portion made up of odd lines.

Claim 17:

<u>Davis</u> and <u>Gennaro et al.</u> disclose a method of embedding a signature in an audio-visual signal for authentication of said audio-visual signal, said signal being comprised of a plurality of sequential frames, each of said plurality of sequential frames being comprised of at least two frame portions, as in Claim 1 above, but the combination of <u>Davis</u> and <u>Gennaro et al.</u> do not disclose,

- "the first and second portions are selected based on said audio-visual signal being one of an interlaced or a noninterlaced signal," although <u>Baker et al.</u> do suggest interlaced and noninterlaced video, as recited below;

however, <u>Baker et al.</u> do disclose,

- "In NTSC, PAL and SECAM, every other scan line belongs to the same field. Each field is drawn on the screen consecutively--first one field, then the other. Many computer monitors, on the other hand, are non-interlaced and the graphics data is not provided in separate fields" [column 2 lines 17-22];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the first and second portions are selected based on said audio-visual signal being one of an interlaced or a noninterlaced signal," in the invention as disclosed by <u>Davis</u> and <u>Gennaro et al.</u> since a video signal may be interlaced with data in separate fields or noninterlaced data not in separate fields as in accordance with a standard, it is reasonable to expect one of ordinary skill in the art to have either standardize video type.

Claim 18:

<u>Davis</u> and <u>Gennaro et al.</u> disclose a method of embedding a signature in an audio-visual signal for authentication of said audio-visual signal, said signal being comprised of a plurality of sequential frames, each of said plurality of sequential frames being comprised of at least two frame portions, as in Claim 17 above, but the combination of <u>Davis</u> and <u>Gennaro et al.</u> do not disclose,

- "said audio-visual signal is said interlaced signal," although <u>Baker et al.</u> do suggest that a video signal may be interlaced, as recited below;

- "said first portion comprising odd lines of the frame of said audio-visual signal,"

    although Baker et al. do suggest fields or portions of a field comprising even and odd

    lines, as recited below;

- "said second portion comprising even lines of the frame of the audio-visual signal,"

    although Baker et al. do suggest fields or portions of a field comprising even and odd

    lines, as recited below;

however, Baker et al. do disclose,

- "A "Field" is video data for a set of lines that make up part of one screen or picture out of

    a video stream. For interlaced systems, a frame usually has two fields" [column 5 lines

    15-16];

- "In an interlaced system, each field is displayed in its entirety--therefore, all of the odd-

    numbered lines are displayed, then the even, then the odd, and so on" [column 5 lines 19-

    22];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the

applicant's invention to include, "said audio-visual signal is said interlaced signal" and "said first

portion comprising odd lines of the frame of said audio-visual signal" and "said second portion

comprising even lines of the frame of the audio-visual signal," in the invention as disclosed by

Davis and Gennaro et al. since a video signal may be interlaced where fields or portions of a

field comprise even and odd lines, it is reasonable to expect one of ordinary skill in the art to

have one upper portion made up of even lines and another lower portion made up of odd lines or

any combination there of.

Claim 19:

<u>Davis</u> and <u>Gennaro et al.</u> disclose a method of embedding a signature in an audio-visual signal

for authentication of said audio-visual signal, said signal being comprised of a plurality of

sequential frames, each of said plurality of sequential frames being comprised of at least two

frame portions, as in Claim 18 above, but the combination of <u>Davis</u> and <u>Gennaro et al.</u> do not

disclose,

- "said upper and lower portions comprise patterns of horizontal lines of said audio-visual

    signal," although <u>Baker et al.</u> do suggest that in interlaced video, fields or portions of

    fields are comprised of even and odd horizontal lines, as recited below;

- "each of said patterns of horizontal lines having fewer lines than the entire audiovisual

    signal," although <u>Baker et al.</u> do suggest that in interlaced video, fields or portions of

    fields are comprised of even and odd horizontal lines, as recited below;

however, <u>Baker et al.</u> do disclose,

- "After writing composite pixel data for sixteen (16) video pixels on four adjacent lines,

    the software according to the first embodiment checks to see if a horizontal line of

    composite pixel data has been completed…This process continues until a complete

    screen of composite pixel data has been written into the display memory (which with

    interlacing includes both an even and odd field)" [column 18 lines 59-60 & column 19

    line 10];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the

applicant's invention to include, "said upper and lower portions comprise patterns of horizontal

lines of said audio-visual signal" and "each of said patterns of horizontal lines having fewer lines

than the entire audiovisual signal," in the invention as disclosed by <u>Davis</u> and <u>Gennaro et al.</u>

since the make up of fields/portions of fields comprise even and odd horizontal lines, it is

reasonable to expect one of ordinary skill in the art to follow similar interlaced video standards.

Claim 20:

<u>Davis</u> and <u>Gennaro et al.</u> disclose a method of embedding a signature in an audio-visual signal

for authentication of said audio-visual signal, said signal being comprised of a plurality of

sequential frames, each of said plurality of sequential frames being comprised of at least two

frame portions, as in Claim 17 above, but the combination of <u>Davis</u> and <u>Gennaro et al.</u> do not

disclose,

- "said audio-visual signal is said non-interlaced signal" although <u>Baker et al.</u> do suggest

  noninterlaced video, as recited below;

- "said first portion comprising an upper half of said frame of said audio-visual signal,"

  although <u>Baker et al.</u> do suggest field portions (i.e. upper/lower), as recited below;

- "said second portion comprises a lower half of said single frame," although <u>Baker et al.</u>

  do suggest field portions (i.e. upper/lower), as recited below;

however, <u>Baker et al.</u> do disclose,

- "It will also be readily apparent that for a non-interlaced video format, even and odd

  fields and even and odd video control information are not required and may be replaced

  with single vertical control information and field portions of the memory" [column 20

  lines 32-36];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the

applicant's invention to include, "said audio-visual signal is said non-interlaced signal" and "said

first portion comprising an upper half of said frame of said audio-visual signal" and "said second

portion comprises a lower half of said single frame," in the invention as disclosed by <u>Davis</u> and

<u>Gennaro et al.</u> since a video signal may be noninterlaced where fields or portions of a field may

comprise even and odd lines, it is reasonable to expect one of ordinary skill in the art to have one

upper portion made up of even lines and another lower portion made up of odd lines or any

combination there of.

4.   Claims 6, 25, & 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over <u>Davis</u>

(US-5907619-A) in view of <u>Gennaro et al.</u> (US-6009176-A) and in further view of <u>Kwon</u> (US-

5373323-A).

Claim 6:

<u>Davis,</u> and <u>Gennaro et al.</u> disclose a method of embedding a signature in an audio-visual signal

for authentication of said audio-visual signal, said signal being comprised of a plurality of

sequential frames, each of said plurality of sequential frames being comprised of at least two

frame portions, as in Claim 1 above, but their combination do not disclose,

-   "said audio-visual signal is a non-interlaced signal," although <u>Kwon</u> does suggest non-

    interlaced or progressive scan video, as recited below;

-   "said first and second frame portions comprise consecutive slices of said audio-visual

    signal," although <u>Kwon</u> does suggest consecutive horizontal lines within each frame, as

    recited below;

- "wherein each of said consecutive slices are further comprised of a group of consecutive lines of said frame," although <u>Kwon</u> does suggest consecutive horizontal lines within each frame, as recited below;

however, <u>Kwon</u> does disclose,

- "On the other hand, in the non-interlaced or "progressive" scan method, each frame of image data is scanned once from the top horizontal line to the bottom horizontal line without any jumping" [column 1 lines 25-28];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "said audio-visual signal is a non-interlaced signal" and "said first and second frame portions comprise consecutive slices of said audio-visual signal" and "wherein each of said consecutive slices are further comprised of a group of consecutive lines of said frame," in the invention as disclosed by <u>Davis,</u> and <u>Gennaro et al.</u> since a video signal may be noninterlaced where portions of a frame may comprise consecutive horizontal lines, it is reasonable to expect one of ordinary skill in the art to have progressive scanning if they do not require even and odd line portions.

Claims 25 & 26:

<u>Davis,</u> and <u>Gennaro et al.</u> disclose and apparatus, as in Claim 22 above, but their combination do not disclose,

- "the capture device includes a camera," although <u>Kwon</u> does suggest a television camera, as recited below;

- "the camera is a medical imaging camera," although <u>Kwon</u> does suggest a television camera, as recited below;

however, Kwon does disclose,

- "a television camera" [column 1 line 29];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the

applicant's invention to include, "said apparatus is a camera" and "the camera is selected from

the group consisting of: a surveillance camera, a security camera, a digital video camera and a

medical imaging camera," in the invention as disclosed by Davis, and Gennaro et al. since a

video signal would imply the usage of some form of video content recording device (i.e.

camera).

5.   Claims 3 & 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis

(US-5907619-A) in view of Gennaro et al. (US-6009176-A) and in further view of Isnardi et al.

(US-6037984-A).

Claim 3:

Davis, and Gennaro et al. disclose a method of embedding a signature in an audio-visual signal

for authentication of said audio-visual signal, said signal being comprised of a plurality of

sequential frames, each of said plurality of sequential frames being comprised of at least two

frame portions, as in Claim 1 above, but their combination do not disclose,

- "said steps of calculating and embedding are repeated until a signature is embedded for

    all regions of said frame," although Isnardi et al. does suggest spreading a watermark

    over several portions, as recited below;

however, Isnardi et al. does disclose,

- "The image that is watermarked is generally divided into a plurality of blocks of pixels,

    where each block is watermarked in the above manner on a block-by-block basis"

    [column 2 lines 27-30];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the

applicant's invention to include, "said steps of calculating- and embedding are repeated until a

signature is embedded for all regions of said frame," in the invention as disclosed by Davis, and

Gennaro et al. for the purposes of limiting the amount of modification to the original video

signal.

Claims 7 & 8:

Davis, and Gennaro et al. disclose a method of embedding a signature in an audio-visual signal

for authentication of said audio-visual signal, said signal being comprised of a plurality of

sequential frames, each of said plurality of sequential frames being comprised of at least two

frame portions, as in Claim 1 above, but their combination do not disclose,

- "the embedded signature comprises a watermark," although Isnardi et al. does suggest a

    spread spectrum watermark, as recited below;

- "the watermark is embedded as a spread spectrum watermark," although Isnardi et al.

    does suggest a spread spectrum watermark, as recited below;

however, Isnardi et al. does disclose,

- "One technique used to identify digital image ownership is a digital "watermark" that is

    embedded into an image or image sequence" [column 1 lines 15-16];

- "the spread watermark" [column 1 line 44];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the

applicant's invention to include, "said steps of calculating- and embedding are repeated until a

signature is embedded for all regions of said frame," in the invention as disclosed by <u>Davis,</u> and

<u>Gennaro et al.</u> for the purposes of identifying digital image ownership.

Claim 9:

<u>Davis,</u> and <u>Gennaro et al.</u> disclose a method of embedding a signature in an audio-visual signal

for authentication of said audio-visual signal, said signal being comprised of a plurality of

sequential frames, each of said plurality of sequential frames being comprised of at least two

frame portions, as in Claim 7 above, their combination further disclosing,

- "the watermark is embedded in a different portion of said frame than the portion of said

  frame for which said signature is generated" (i.e. "authentication of individual sections of

  an image frame, using only one signature," which suggests that the watermark would be

  embedded only in one of the plurality of portions/fields) [column 5 lines 12-13].

Allowable Subject Matter

Claims 23, 24, & 29 are objected to as being dependent upon a rejected base claim, but would be

allowable if rewritten in independent form including all of the limitations of the base claim and

any intervening claims.

Response to Arguments

Applicant's arguments filed 01/27/2009 have been fully considered but they are not persuasive.

- The applicants' arguments on pages 9-12 have been carefully considered but are non-persuasive at this point in time;

    o The examiner suggests incorporating the distinction of embedding the signature in a portion of a frame directly without any prior processing as those found in the prior art of record (i.e. hashing, compression, etc.) into the claim language as this distinction is not readily apparent in the current claims; the incorporation of the limitations Objected to as Allowable subject matter would also help to place the applicants' application into condition for allowance as these aspects clarify the methodology used to create the digital signature that is applied/embedded in a portion of a frame directly without any prior processing since this limitation would over come the cited prior art of the record.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

Application/Control Number: 10/518,270													Page 23
Art Unit: 2436

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Examiner Oscar Louie whose telephone number is 571-270-1684.

The examiner can normally be reached Monday through Thursday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Nasser Moazzami, can be reached at 571-272-4195. The fax phone number for

Formal or Official faxes to Technology Center 2400 is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you

would like assistance from a USPTO Customer Service Representative or access to the

automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

OAL
04/12/2009
/Nasser G Moazzami/

Supervisory Patent Examiner, Art Unit 2436